Tele-Reporting for Cost-Effective Public Health

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A demonstration of the utility of wireless, pen-based computers for mobile public health professionals is being conducted by a team of public-private partners in California, led by the Western Consortium for Public Health, with support from the National Telecommunications and Information Administration. The project team includes: California Department of Health Services, Yolo County Health Department, Lawrence Livermore National Laboratory, and Decade Software Corporation. A successful demonstration will reduce administrative costs, while increasing staff productivity, retention, cross-agency collaboration, and access to vital information.

California and the nation need easily accessible integrated information and communication systems to assure the public's health and safety. The current lack of system integration exacerbates the delivery of public health, especially in remote rural areas. One of the more serious information infrastructure problems for public health results from its dependence on mobile staff. In fact, conventional office-based information systems add to the workload of mobile practitioners by causing them to pre-record data – by hand – while in the field and then later to enter that same data into their office computer systems. This redundant data entry adds an estimated hour of work each day.

Altogether, 35 public health programs (each with its own reporting form) and 13 environmental protection programs (requiring 20 data forms) exist in each of California's 58 county health departments. Traveling public health nurses and environmental health specialists spend increasingly excessive time on unproductive functions rather than on services. Therefore, they need to increase their capability to report quickly and meaningfully about possible threats to the community public health and safety, such as toxic spills and outbreaks of communicable diseases, without increasing staffing costs. To address this situation, a public health information infrastructure demonstration project has been developed. This project has the following four goals:

1. To increase the capacity to deliver essential public health services in geographically distant areas while maintaining current quality of services and not increasing costs;

2. To actively integrate clinical service delivery and information handling functions while improving the usability and efficiency of the latter;

3. To integrate communications and enhance collaboration among public and private sector stakeholders concerned about public health/safety at the local level; and

4. To pilot test public/private key RSA-DES encryption standards in a community setting.

Remote data entry/access via a pen-based computer is being utilized to dramatically reduce manual data entry of public health data and provide access to critical databases.

The use of pen-tablet data entry (with standard encryption techniques) by mobile public health professionals is being demonstrated in a rural county of 150,000 population (Yolo) proximate to Sacramento. In this demonstration project a combination of wireless and wire-based networks and commercial off-the-shelf (COTS) components is being used, along with public/private key and standard encryption techniques, to increase the efficiency of mobile public health professionals. Specifically, these staff are able to:

1. Capture data at point-of-service delivery, thereby reducing redundant data entry;

2. Access databases as the need arises, e.g., to obtain an infant's immunization record;

3. Receive program alerts from central office, e.g., regarding a rabies outbreak;

4. Automate and securely transmit daily logs and forms; and

5. Utilize exception reporting concepts in lieu of narratives describing progress.